

| | Type | Ref # | Hits | Search Text | DBs |
|---|------|-------|------|---|---------------------------|
| 1 | BRS | S15 | 6 | S14 and lithium and (film layer) and electrode and binder\$2 and (porosity porous pores) and particle\$2 and separator\$2 and (styrene polyethylene ptfe polyvinylidene pvdf fep polyacrylic polyacrylonitrile) and ((inorganic near oxide\$2) alumina silica zirconia titania) | US-PGPUB; USPAT; USOCR |
| 2 | BRS | S14 | 204 | 429//322 | US-PGPUB; USPAT; USOCR |
| 3 | BRS | S13 | 5 | S9 and lithium and (film layer) and electrode and binder\$2 and (porosity porous pores) and particle\$2 and separator\$2 and (styrene polyethylene ptfe polyvinylidene pvdf fep polyacrylic polyacrylonitrile) and ((inorganic near oxide\$2) alumina silica zirconia titania) | US-PGPUB; USPAT; USOCR |
| 4 | BRS | S9 | 77 | 429//321 | US-PGPUB; USPAT; USOCR |
| 5 | BRS | S18 | 1436 | 429//231.95 | US-PGPUB; USPAT; USOCR |
| 6 | BRS | S12 | 8 | S9 and lithium and (film layer) and electrode and binder\$2 and porosity and size\$2 and particle\$2 | US-PGPUB; USPAT; USOCR |
| 7 | BRS | S10 | 63 | S9 and lithium and (film layer) | US-PGPUB; USPAT; USOCR |
| 8 | BRS | S11 | 32 | S9 and lithium and (film layer) and electrode and binder\$2 | US-PGPUB; USPAT; USOCR |

| | Type | Ref # | Hits | Search Text | DBs |
|----|------|-------|------|---|---------------------------|
| 9 | BRS | S19 | 161 | S18 and lithium and (film layer) and electrode and binder\$2 and (porosity porous pores) and particle\$2 and separator\$2 and (styrene polyethylene ptfe polyvinylidene pvdf fep polyacrylic polyacrylonitrile) and ((inorganic near oxide\$2) alumina silica zirconia titania) | US-PGPUB; USPAT; USOCR |
| 10 | BRS | S7 | 0 | (hei).in. and battery | JPO |
| 11 | BRS | S17 | 3 | S16 and lithium and (film layer) and electrode and binder\$2 and (porosity porous pores) and particle\$2 and separator\$2 and (styrene polyethylene ptfe polyvinylidene pvdf fep polyacrylic polyacrylonitrile) and ((inorganic near oxide\$2) alumina silica zirconia titania) | US-PGPUB; USPAT; USOCR |
| 12 | BRS | S5 | 0 | (hei).in. and (lithium same battery) | US-PGPUB; USPAT; USOCR |
| 13 | BRS | S8 | 14 | (hei).in. and battery | US-PGPUB; USPAT; USOCR |

| | Type | Ref # | Hits | Search Text | DBs |
|----|------|-------|------|--|---------------------------|
| 14 | BRS | S20 | 38 | S18 and lithium and (film layer) and electrode and binder\$2 and (porosity porous pores) and particle\$2 and separator\$2 and (styrene polyethylene ptfe polyvinylidene pvdf fep polyacrilic polyacrylonitryle) and ((inorganic near oxide\$2) alumina silica zirconia titania) and (insulat\$3 adj3 (film layer)) | US-PGPUB; USPAT; USOCR |
| 15 | BRS | S6 | 0 | (hei).in. and (lithium same battery) | JPO |
| 16 | BRS | S4 | 0 | hei.in. and (lithium same battery) | US-PGPUB; USPAT; USOCR |
| 17 | BRS | S1 | 1 | 10/562438 | US-PGPUB |
| 18 | BRS | S3 | 0 | hei.in. and (lithium same battery) | US-PGPUB |
| 19 | BRS | S2 | 1 | S1 and apparent | US-PGPUB |
| 20 | BRS | S16 | 88 | 429//323 | US-PGPUB; USPAT; USOCR |
| 21 | BRS | S34 | 0 | S25 and (insulat\$4 near5 film) and film\$2 and (oxide same filler same binder) | USPAT |
| 22 | BRS | S44 | 1 | S25 and pore\$2 | USPAT |
| 23 | BRS | S40 | 1 | S25 and thickness and porosity | USPAT |
| 24 | BRS | S41 | 1 | S25 and thickness and porosity and size\$2 | USPAT |
| 25 | BRS | S42 | 0 | S25 and thickness and porosity and size\$2 and thick | USPAT |
| 26 | BRS | S45 | 0 | S25 and polycrystal\$6 | USPAT |
| 27 | BRS | S46 | 1 | S25 and crystal\$5 | USPAT |
| 28 | BRS | S56 | 9 | kawakami.in. and (inorganic near5 oxide) and \$5crystal\$5 and battery and lithium | US-PGPUB; USPAT |

| | Type | Ref # | Hits | Search Text | DBs |
|----|------|-------|------|--|------------------------|
| 29 | BRS | S61 | 1 | S25 and size\$2 and separator and porosity and porous | USPAT |
| 30 | BRS | S43 | 1 | S25 and (pore same size\$2) | USPAT |
| 31 | BRS | S48 | 1 | S25 and particle\$3 and \$5crystal\$5 | USPAT |
| 32 | BRS | S47 | 1 | S25 and particle\$3 | USPAT |
| 33 | BRS | S23 | 48 | inoue.in. and electrode and (inorganic oxide filler) and film and (pores porous porosity) and (binder\$2 adhesive\$2) and (insulat\$4 near5 film\$2) | US-PGPUB; USPAT; USOCR |
| 34 | BRS | S22 | 127 | inoue.in. and electrode and (inorganic oxide filler) and film and (pores porous porosity) and (binder\$2 adhesive\$2) | US-PGPUB; USPAT; USOCR |
| 35 | BRS | S38 | 1 | S25 and (insulat\$4 near5 film) and film\$2 and oxide and (adhesiv\$4 binder) | USPAT |
| 36 | BRS | S31 | 1 | S25 and (organic near5 electrolyte) | USPAT |
| 37 | BRS | S37 | 0 | S25 and (insulat\$4 near5 film) and film\$2 and filler and adhesiv\$4 | USPAT |
| 38 | BRS | S39 | 1 | S25 and (insulat\$4 near5 film) and film\$2 and oxide and (adhesiv\$4 binder) and (cover\$3 near5 film) | USPAT |
| 39 | BRS | S25 | 1 | "6395423".pn. | USPAT |
| 40 | BRS | S24 | 9 | inoue.in. and electrode and (inorganic oxide filler) and film and (pores porous porosity) and (binder\$2 adhesive\$2) and (insulat\$4 near5 film\$2) and (lithium near5 battery) | US-PGPUB; USPAT; USOCR |

| | Type | Ref # | Hits | Search Text | DBs |
|----|------|-------|-------|---|------------------------|
| 41 | BRS | S28 | 0 | S25 and aqueous | USPAT |
| 42 | BRS | S30 | 1 | S25 and electrolyte and separator and electrode\$2 and battery | USPAT |
| 43 | BRS | S49 | 1 | 10/562438 | US-PGPUB |
| 44 | BRS | S29 | 1 | S25 and electrolyte and separator and electrode\$2 | USPAT |
| 45 | BRS | S54 | 2 | kawakami.in. and (inorganic near5 oxide) same \$5crystal\$5 | US-PGPUB; USPAT |
| 46 | BRS | S50 | 1 | S49 and polycrystal\$6 | US-PGPUB |
| 47 | BRS | S52 | 0 | kawakimi.in. and (inorganic near5 oxide) | US-PGPUB; USPAT |
| 48 | BRS | S53 | 70 | kawakami.in. and (inorganic near5 oxide) | US-PGPUB; USPAT |
| 49 | BRS | S51 | 0 | kawakimi.in. and (inorganic near5 oxide) | US-PGPUB |
| 50 | BRS | S55 | 48 | kawakami.in. and (inorganic near5 oxide) and \$5crystal\$5 | US-PGPUB; USPAT |
| 51 | BRS | S36 | 0 | S25 and (insulat\$4 near5 film) and film\$2 and oxide and filler and adhesiv\$4 | USPAT |
| 52 | BRS | S58 | 0 | S57 and \$5crystal\$5 | USPAT |
| 53 | BRS | S59 | 1 | S25 and size and separator | USPAT |
| 54 | BRS | S63 | 0 | S57 and separator and por\$6 | USPAT |
| 55 | BRS | S62 | 1 | S25 and size\$2 and separator and porosity and porous and pore | USPAT |
| 56 | BRS | S60 | 1 | S25 and size\$2 and separator | USPAT |
| 57 | BRS | S21 | 14966 | inoue.in. | US-PGPUB; USPAT; USOCR |
| 58 | BRS | S65 | 1 | "6811928".pn. | USPAT |
| 59 | BRS | S67 | 1 | S65 and separator and por\$6 | USPAT |
| 60 | BRS | S64 | 0 | S57 and separator | USPAT |
| 61 | BRS | S57 | 1 | "6811982".pn. | USPAT |
| 62 | BRS | S66 | 0 | S65 and \$5crystal\$5 | USPAT |

| | Type | Ref # | Hits | Search Text | DBs |
|----|------|-------|------|--|------------------------|
| 63 | BRS | S26 | 0 | S25 and (aqueous same electrolyte same battery) and (positive same negative same electrode\$2 same separator\$2) | USPAT |
| 64 | BRS | S35 | 0 | S25 and (insulat\$4 near5 film) and film\$2 and oxide and filler and binder | USPAT |
| 65 | BRS | S32 | 1 | S25 and electrolyte | USPAT |
| 66 | BRS | S33 | 1 | S25 and (insulat\$4 near5 film) | USPAT |
| 67 | BRS | S27 | 0 | S25 and (aqueous same electrolyte same battery) and (electrode\$2 same separator\$2) | USPAT |
| 68 | BRS | S71 | 3843 | S70 separator and actual and ratio | US-PGPUB |
| 69 | BRS | S72 | 1 | S70 and separator and actual and ratio | US-PGPUB |
| 70 | BRS | S73 | 0 | (zhang same zhangming).in. | US-PGPUB; USPAT |
| 71 | BRS | S81 | 3 | S77 and separator and film and porosity and size\$2 and pore | US-PGPUB; USPAT |
| 72 | BRS | S85 | 0 | (ito same masanori).in. and separator and lithium and battery | US-PGPUB; USPAT |
| 73 | BRS | S86 | 0 | S82 and separator and lithium and battery | US-PGPUB; USPAT |
| 74 | BRS | S111 | 1 | "6395423".pn. | USPAT |
| 75 | BRS | S87 | 3 | S82 and battery | US-PGPUB; USPAT |
| 76 | BRS | S70 | 1 | 10/562438 | US-PGPUB |
| 77 | BRS | S97 | 1 | S96 and porosity | US-PGPUB; USPAT; USOCR |
| 78 | BRS | S83 | 0 | (ito same masanori).in. and separator and lithium and battery and insulat\$6 and film | US-PGPUB; USPAT |

| | Type | Ref # | Hits | Search Text | DBs |
|----|------|-------|------|--|---------------------------|
| 79 | BRS | S109 | 1 | S108 and polypropylene and separator and porosity | US-PGPUB; USPAT; USOCR |
| 80 | BRS | S110 | 71 | (lithium same battery) and (((polypropylene PPE) near5 separator) same porosity) and porosity | US-PGPUB; USPAT; USOCR |
| 81 | BRS | S74 | 0 | cellgard.as. | US-PGPUB; USPAT |
| 82 | BRS | S75 | 55 | celgard.as. | US-PGPUB; USPAT |
| 83 | BRS | S76 | 23 | celgard.as. and separator and lithium and battery | US-PGPUB; USPAT |
| 84 | BRS | S93 | 733 | (lithium same battery) and separator and ((insulative insulating ceramic) near5 (layer film)) and (pore porous porosity) | US-PGPUB; USPAT; USOCR |
| 85 | BRS | S96 | 1 | "6395423".pn. | US-PGPUB; USPAT; USOCR |
| 86 | BRS | S106 | 1 | "4791144".pn. | US-PGPUB; USPAT; USOCR |
| 87 | BRS | S103 | 30 | (lithium near battery) and ((inorganic ceramic) same (film separator) same porosity) | US-PGPUB; USPAT; USOCR |
| 88 | BRS | S108 | 1 | "6881515".pn. | US-PGPUB; USPAT; USOCR |
| 89 | BRS | S88 | 372 | (lithium same battery) and (separator near5 porosity) | US-PGPUB; USPAT; USOCR |
| 90 | BRS | S89 | 359 | (lithium same battery) and (separator near5 porosity) and (ceramic near5 (layer film)) and (pore porous porosity) | US-PGPUB; USPAT; USOCR |
| 91 | BRS | S90 | 11 | (lithium same battery) and (separator near5 porosity) and (ceramic near5 (layer film)) and (pore porous porosity) | US-PGPUB; USPAT; USOCR |

| | Type | Ref # | Hits | Search Text | DBs |
|-----|------|-------|------|--|---------------------------|
| 92 | BRS | S82 | 67 | (ito same masanori).in. | US-PGPUB; USPAT |
| 93 | BRS | S91 | 0 | (lithium same battery) and (separator near5 porosity) and (ceramic near5 (layer film)) and (pore porous porosity) | EPO; JPO; DERWENT |
| 94 | BRS | S94 | 96 | (lithium same battery) and (separator near5 porosity) and ((insulative insulating ceramic) near5 (layer film)) and (pore porous porosity) | US-PGPUB; USPAT; USOCR |
| 95 | BRS | S104 | 30 | (lithium near battery) and ((inorganic ceramic) same (film separator) same porosity) and porosity | US-PGPUB; USPAT; USOCR |
| 96 | BRS | S105 | 41 | (lithium near battery) and ((inorganic ceramic) same (layer film separator coat\$3) same porosity) and porosity | US-PGPUB; USPAT; USOCR |
| 97 | BRS | S78 | 1 | "6432586".pn. | US-PGPUB; USPAT |
| 98 | BRS | S79 | 1 | S78 and separator and film and porosity | US-PGPUB; USPAT |
| 99 | BRS | S80 | 1 | S78 and separator and film and porosity and size\$2 and pore | US-PGPUB; USPAT |
| 100 | BRS | S98 | 1 | "6811928".pn. | USPAT |
| 101 | BRS | S99 | 1 | S98 and porosity | US-PGPUB; USPAT; USOCR |
| 102 | BRS | S100 | 1 | "6287720".pn. | US-PGPUB; USPAT; USOCR |
| 103 | BRS | S101 | 1 | S100 and porosity | US-PGPUB; USPAT; USOCR |
| 104 | BRS | S102 | 96 | (lithium near battery) and (separator same (polypropylene PPE) same porosity) | US-PGPUB; USPAT; USOCR |
| 105 | BRS | S107 | 1 | S106 and filler\$2 and porosity | US-PGPUB; USPAT; USOCR |

| | Type | Ref # | Hits | Search Text | DBs |
|-----|------|-------|------|--|---------------------------|
| 106 | BRS | S84 | 0 | (ito same masanori).in. and separator and lithium and battery and film | US-PGPUB; USPAT |
| 107 | BRS | S113 | 1 | S111 and (porosity pore size\$2 porous) and separator and inorganic | USPAT |
| 108 | BRS | S112 | 0 | S111 and (porosity pore size\$2 porous) and separator and filler | USPAT |
| 109 | BRS | S69 | 17 | (lithium same battery) and (insulat\$4 near5 (film layer)) and (separator near5 porosity) and ((insulat\$4 near5 (film layer)) same porosity) | US-PGPUB; USPAT; USOCR |
| 110 | BRS | S68 | 357 | (lithium same battery) and (insulat\$4 near5 (film layer)) and porosity | US-PGPUB; USPAT; USOCR |
| 111 | BRS | S95 | 106 | (lithium same battery) and (separator near5 porosity) and ((insulating ceramic inorganic) near5 (layer film)) and (pore porous porosity) | US-PGPUB; USPAT; USOCR |
| 112 | BRS | S77 | 12 | (zhang same zhengming).in. | US-PGPUB; USPAT |
| 113 | BRS | S92 | 18 | (lithium same battery) and (separator same porosity) and (ceramic near5 (layer film)) and (pore porous porosity) | US-PGPUB; USPAT; USOCR |
| 114 | BRS | S150 | 2 | (sol near5 polycrystalline) and particles and colloid\$3 | USPAT |
| 115 | BRS | S147 | 29 | (sol near5 polycrystalline) and particles | USPAT |
| 116 | BRS | S153 | 0 | S114 and binder | USPAT |

| | Type | Ref # | Hits | Search Text | DBs |
|-----|------|-------|------|---|---------------------------|
| 117 | BRS | S172 | 63 | (lithium same battery) and (roughness near3 (anode cathode electrode)) and roughness | US-PGPUB; USPAT |
| 118 | BRS | S146 | 1 | S118 and inorganic | USPAT |
| 119 | BRS | S148 | 0 | (sol near5 polycrystalline) and particles and colloid | USPAT |
| 120 | BRS | S145 | 0 | S118 and filler\$2 | USPAT |
| 121 | BRS | S149 | 0 | (sol near5 polycrystalline) and particles and coloid | USPAT |
| 122 | BRS | S117 | 7 | S116 and lithium and battery and film and porosity | EPO; JPO; DERWENT |
| 123 | BRS | S138 | 1 | S118 and crystal\$5 and size\$2 | USPAT |
| 124 | BRS | S141 | 1 | S134 and polycrystal\$ | US-PGPUB |
| 125 | BRS | S140 | 0 | S134 and polycrystal\$^ | US-PGPUB |
| 126 | BRS | S144 | 125 | (lithium same battery) and (filler\$2 same (crystalline polycrystal\$5 crystal\$)) | US-PGPUB; USPAT |
| 127 | BRS | S139 | 0 | S130 and crystal\$5 | US-PGPUB |
| 128 | BRS | S173 | 63 | (lithium same battery) and (roughness near3 (anode cathode electrode)) and roughness | US-PGPUB; USPAT; USOCR |
| 129 | BRS | S143 | 25 | (lithium same battery) and (filler\$2 same (crystalline polycrystal\$5 crystal\$) same film) | US-PGPUB; USPAT |
| 130 | BRS | S167 | 65 | (lithium same battery) and (surface same roughness same adhesion) and roughness | US-PGPUB; USPAT |
| 131 | BRS | S134 | 1 | 10/562438 | US-PGPUB |
| 132 | BRS | S160 | 0 | S130 and binder\$2 | US-PGPUB |

| | Type | Ref # | Hits | Search Text | DBs |
|-----|------|-------|------|--|-----------------|
| 133 | BRS | S137 | 29 | (lithium same battery) and (electrode same roughness) and (dry\$3 same (speed rate)) | US-PGPUB; USPAT |
| 134 | BRS | S171 | 203 | (lithium same battery) and (roughness same (anode cathode electrode)) and roughness | US-PGPUB; USPAT |
| 135 | BRS | S176 | 1 | S118 and void\$2 | USPAT |
| 136 | BRS | S135 | 1 | S134 and electrode\$2 and rough\$4 | US-PGPUB |
| 137 | BRS | S136 | 170 | (lithium same battery) and (electrode same roughness) | US-PGPUB; USPAT |
| 138 | BRS | S119 | 0 | S114 and separator and porosity | USPAT |
| 139 | BRS | S131 | 1 | S130 and porosity | US-PGPUB |
| 140 | BRS | S133 | 1 | S130 and pore and size\$2 | US-PGPUB |
| 141 | BRS | S127 | 0 | sun.in. and (lithium near5 battery). and (heat near activatabl) | USPAT |
| 142 | BRS | S130 | 1 | "20030152828" | US-PGPUB |
| 143 | BRS | S129 | 7 | sun.in. and (lithium near5 battery) and (heat near activatable) | US-PGPUB; USPAT |
| 144 | BRS | S132 | 1 | S118 and pore and size\$3 | USPAT |
| 145 | BRS | S128 | 0 | sun.in. and (lithium near5 battery) and (heat near activatabl) | US-PGPUB; USPAT |
| 146 | BRS | S168 | 5 | (lithium same battery) and (surface same roughness same adhesion same separator) and roughness | US-PGPUB; USPAT |
| 147 | BRS | S161 | 1 | S130 and part\$2 | US-PGPUB |
| 148 | BRS | S158 | 1 | S118 and part\$2 | USPAT |
| 149 | BRS | S152 | 1 | S130 and size\$2 | US-PGPUB |
| 150 | BRS | S120 | 1 | S118 and separator and porosity | USPAT |
| 151 | BRS | S163 | 1 | S118 and colloid\$3 | USPAT |
| 152 | BRS | S118 | 1 | "6395423".pn. | USPAT |

| | Type | Ref # | Hits | Search Text | DBs |
|-----|------|-------|-------|---|-------------------|
| 153 | BRS | S115 | 9 | S114 and lithium and battery and film and porosity | EPO; JPO; DERWENT |
| 154 | BRS | S164 | 1 | "6811928".pn. | USPAT |
| 155 | BRS | S126 | 3 | S125 and (lithium near5 battery) and (separator\$4 near5 porosity) and porosity and separator | US-PGPUB; USPAT |
| 156 | BRS | S162 | 0 | S118 and colloid\$3 | US-PGPUB |
| 157 | BRS | S174 | 0 | S130 and void\$2 | US-PGPUB |
| 158 | BRS | S169 | 34 | (lithium same battery) and (roughness same adhesion same electrode) and roughness | US-PGPUB; USPAT |
| 159 | BRS | S170 | 35 | (lithium same battery) and (roughness same adhesion same (anode cathode electrode)) and roughness | US-PGPUB; USPAT |
| 160 | BRS | S114 | 4301 | H01M006/18 | EPO; JPO; DERWENT |
| 161 | BRS | S175 | 0 | S130 and void\$2 | USPAT |
| 162 | BRS | S165 | 1 | S164 and filler | USPAT |
| 163 | BRS | S123 | 276 | (lithium near5 battery) and (separator\$4 near5 porosity) and porosity | US-PGPUB; USPAT |
| 164 | BRS | S121 | 1 | S118 and separator\$2 and porositi\$4 | USPAT |
| 165 | BRS | S156 | 1 | S118 and cross\$7 and binder | USPAT |
| 166 | BRS | S124 | 276 | (lithium near5 battery) and (separator\$4 near5 porosity) and porosity and separator | US-PGPUB; USPAT |
| 167 | BRS | S122 | 276 | (lithium near5 battery) and (separator\$4 near5 porosity) | US-PGPUB; USPAT |
| 168 | BRS | S116 | 17647 | H01M004/58 | EPO; JPO; DERWENT |
| 169 | BRS | S125 | 707 | nagayama.in. | US-PGPUB; USPAT |

| | Type | Ref # | Hits | Search Text | DBs |
|-----|------|-------|------|---|--------------------|
| 170 | BRS | S166 | 65 | (lithium same battery) and (surface same roughness same adhesion) | US-PGPUB; USPAT |
| 171 | BRS | S159 | 0 | S130 and binder\$2 and part\$2 | US-PGPUB |
| 172 | BRS | S151 | 0 | S130 and size\$2 | USPAT |
| 173 | BRS | S157 | 0 | S118 and cross\$7 and binder and weight | USPAT |
| 174 | BRS | S142 | 17 | (lithium same battery) and (filler\$2 same (crystalline polycrystal\$5 crystal\$) same film) | US-PGPUB |
| 175 | BRS | S155 | 1 | S118 and cross\$7 | USPAT |
| 176 | BRS | S154 | 0 | S114 and cross\$7 | USPAT |

| | Type | L # | Hits | Search Text | DBs |
|---|------|-----|------|---|----------------------------------|
| 1 | BRS | L1 | 255 | ((inoue same kaoru) (kato same kiyomi) (suzuki same kohei) (ikuta same shigeo) (fukumoto same yusuke) (hayashi same tetsuya)).in. | US- PGPUB; USPAT; USOCR |
| 2 | BRS | L2 | 29 | ((inoue same kaoru) (kato same kiyomi) (suzuki same kohei) (ikuta same shigeo) (fukumoto same yusuke) (hayashi same tetsuya)).in. and lithium and electrode and porosity and separator | US- PGPUB; USPAT; USOCR |
| 3 | BRS | L3 | 25 | ((inoue same kaoru) (kato same kiyomi) (suzuki same kohei) (ikuta same shigeo) (fukumoto same yusuke) (hayashi same tetsuya)).in. and lithium and electrode and porosity and separator and insulat\$4 | US- PGPUB; USPAT; USOCR |